

WHAT IS RISK BASED INSPECTION?

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RISK BASED INSPECTION IN THE OIL & PETROCHEMICAL INDUSTRIES

- Introduction
- History
- Risk Matrix



RISK BASED INSPECTION IN THE OIL & PETROCHEMICAL INDUSTRIES

- 1 Extreme
- 2 High
- 3 Medium
- 4 Low
- 5 Negligible

Criticality Rating

Probability of Failure

High	3	2	1	1*
Medium	4	3	2	1
Low	5	4	3	2
Negligible	5	5	4	3
	Negligible	Low	Medium	High

Consequences of failure

Note: This 'extreme' criticality situation shall not be tolerated and rectifying action shall be taken to reduce the risk



RISK BASED INSPECTION ANALYSIS

- Compliance with regulatory requirements
- Reduced maintenance and inspection costs
- Focus inspection resources
- Improve shutdown planning



IMPLEMENTATION

- Scope
- Team composition
 - In-house
 - Consultant
- Software program to use
- Input data
 - Design concept
 - Inspection history
- Audit trail



REDUCTIONS IN INSPECTION BUDGET IMPLICATIONS

- Reduced resources
- Contract inspection
- Need to focus resources
- Problems



● Output

- Inspection schedule
- Inspection plan

● Follow-up

- Update inspection schedule and plan

● Good Practice

- External review
- System to approve extension to overdue inspections



IMPROVING RELIABILITY, DESIGN STANDARDS, PRACTICES AND PREVENTION MEASURES

- NEW CONSTRUCTION
 - Owner input
 - Rationalize piping specifications
 - Design concept with long runlengths, easy maintenance/inspection
 - Build in ‘Best Practice’
 - Approved vendors of equipment
 - ‘Owner’ involved in project Quality Control



IMPROVING RELIABILITY, DESIGN STANDARDS, PRACTICES AND PREVENTION MEASURES

- EXISTING PLANT
 - Maintain good records
 - Incident investigation
 - Management of change
 - Good communication within operating team
 - Measurement of reliability and analysis of results
 - Share information



WHAT INDUSTRY SHOULD DO TO MAINTAIN PLANT INTEGRITY. DOES IT?

- Work with regulatory authorities
- Share information
- Staff training and development
- Use of external audits

